



Terms of Reference for the SOCAT Steering Committee

September 2026

Overview

The **Surface Ocean CO₂ Atlas** (SOCAT, www.socat.info) is the global synthesis effort of *in situ* surface ocean $f\text{CO}_2$ ¹ (fugacity of carbon dioxide) observations made according to community-agreed standards with transparent and traceable quality control, allowing qualitative assessment of uncertainty in the data. SOCAT is the data assembly centre for surface ocean $f\text{CO}_2$ measurements collected through the Surface Ocean CO₂ Observing Network (SOCONET) and for other $f\text{CO}_2$ data that meets the SOCAT quality and reporting requirements. Data providers perform primary quality control checks on their data before data submission to SOCAT. Secondary quality control is then carried out by SOCAT scientists, known as quality controllers, who are organised in regional groups².

SOCAT data are trusted and transparent because they are delivered through an open, community-driven quality control and synthesis process aligned with FAIR (Findability, Accessibility, Interoperability, Reusability) data principles. The freely available, annually updated SOCAT synthesis and gridded products form the observational basis for open ocean and coastal carbon sink estimates generated by the Surface Ocean CO₂ Mapping (SOCOM) program and others, and for ocean acidification assessments. The ocean sink estimates provide, together with the rate of atmospheric CO₂ increase, an independent constraint on the land carbon sink. SOCAT data are used in the Global Carbon Budget, the World Meteorological Organization's Global Greenhouse Gas Watch (G3W), Intergovernmental Panel on Climate Change (IPCC) reports, the Planetary Health Check, United Nations Sustainable Development Goal 14, the Decade of Ocean Science and other high-level policy- and management-relevant assessments. SOCONET, SOCAT, and SOCOM are linked international efforts that, along with additional critical data from satellites, models and re-analysis, enable the inclusion of ocean carbon and carbonate system information in these assessments. SOCAT products are used in circa 100 scientific publications per year. SOCAT is endorsed by

¹Fugacity of CO₂ ($f\text{CO}_2$) is the partial pressure of CO₂ ($p\text{CO}_2$) corrected for non-ideal behaviour of the gas.

²Regional groups and their leads are listed on www.socat.info.

GOOS (Global Ocean Observing System of IOC (Intergovernmental Oceanographic Commission) of UNESCO), IOCCP (International Ocean Carbon Coordination Project) and SOLAS (Surface Ocean-Lower Atmosphere Study).

SOCAT Steering Committee

The SOCAT Steering Committee (SC) is the decision-making body of SOCAT and provides scientific leadership and oversight for the development and execution of the synthesis effort.

Membership of the SOCAT Steering Committee

- The SC is composed of a Chair or two co-Chairs and 6 - 12 members.
- Each SOCAT hub³ has one member on the SC.
- The OceanOPS SOCONET Technical Coordinator and at least one additional SOCONET SC member are members.
- Major SOCAT data providers and / or SOCAT quality controllers and / or SOCAT users comprise at least half of the SC. These are referred to as science members (of the SC).
- Representatives (if any) of government agencies, relevant international and intergovernmental bodies and national scientific programs can be appointed as a member on the basis of their major involvement in SOCAT activities.
- The OceanOPS SOCONET Technical Coordinator and representatives of the SOCAT hubs and (if any) of government agencies, international and intergovernmental bodies and national scientific programs are ex-officio SC members, i.e. by virtue of holding another office. If they leave that office, they leave the SC. Ex-officio members do not have a maximum period of service on the SC. They are not science members.
- Chairs (or co-Chairs) ideally have both scientific expertise and relevant external engagement.
- Science members are nominated with the aim of ensuring the SC members collectively encompass relevant scientific expertise as deemed necessary by the SC, while also reflecting wider diversity.
- The Chair is (or co-Chairs are) appointed for a maximum period of two 4-year terms, independently of any service as science members.
- Science members are appointed for a 4-year term with the possibility to serve for a total of three terms.

³SOCAT hubs carry out specific tasks, such as SOCAT data management, community coordination and data support. SOCAT hubs and the SOCAT governance structure will be described in 'How does SOCAT work?' - SOCAT governance document 2.

- Ex-officio SC members are not allowed to serve as Chair or co-Chair, unless they agree to serve a full term and change their status from an ex-officio member to a science member.
- All SC members, notably the Chair (or co-Chairs), science members and ex-officio members, have voting rights. Decisions are taken by a simple majority.

Responsibilities of the SOCAT Steering Committee

1. Encourage timely data submission to SOCAT
2. Coordinate the SOCAT timetable and annual release
3. Coordinate the SOCAT secondary quality control
4. Maintain and improve the quality of the SOCAT data products by regular review of the SOCAT quality control criteria
5. Consult SOCONET on all changes related to SOCAT quality control criteria
6. Respond to any SOCONET requests related to the SOCAT quality control criteria and protocols
7. Keep SOCAT documentation up-to-date
8. Communicate and consult with SOCAT groups and the SOCAT community
9. Develop SOCAT strategy in consultation with the SOCAT, SOCONET and SOCOM communities
10. Liaise with relevant user communities, including SOCOM, the Global Carbon Project and the G3W
11. Represent SOCAT at international meetings and workshops
12. Encourage scientific use of SOCAT data products and publicise achievements
13. Encourage funding agencies to support SOCAT activities
14. Encourage coordination of efforts with organizations involved in relevant surface ocean observations
15. Foster training and capacity building as relevant for SOCAT

Expected commitment of each individual SOCAT SC member

- Actively contribute to the responsibilities of the SOCAT SC
- Participate in virtual SC meetings at least four times a year
- Participate in in-person SC meetings (nominally every two years)
- Provide input to the agenda for SC meetings
- Contribute to virtual and in-person SOCAT workshops